

***Procambarus (Pennides) ouachitae* Penn 1956**

Ouachita River crayfish



Photo by C. Lukhaup

Distribution, Habitat, and Behavior

Procambarus ouachitae occurs in the Ouachita and Arkansas river systems in southwestern Arkansas (Payne 1972) and in the Yazoo River basin, MS (Hobbs 1989). Records in the MS crayfish database (this website) indicate *P. ouachitae* collections from the following Yazoo River basin drainages: Big Sunflower, Coldwater, Little Tallahatchie, Tallahatchie, Upper Yazoo, Yalobusha, and Yocona in Benton, Calhoun, Chickasaw, Grenada, Holmes, Lafayette, Marshall, Panola, Pontotoc, Tate, Union, Webster, Yalobusha, and Yazoo counties, Mississippi. A collection from the Wolf river drainage in Benton county is also indicated but it is outside of the Yazoo Basin and does not include a form I male. Fitzpatrick and Suttikus (1992) also report the species from Montgomery and Webster counties.

In Arkansas, *P. ouachitae* occurs in streams with strong current, substrate consisting of mixed sand and gravel with or without flat rocks, and clear, colorless, shallow (<38 cm) water (Penn 1956). About half of the collections were from sites with exposure to sunlight and with sparse to moderate amounts of aquatic vegetation (Penn 1956). In Mississippi, we found the species in streams with moderate flow, sand or clay substrate, and sparse aquatic vegetation (unpublished data).

Penn (1956) noted that the species is primarily nocturnal, foraging at night predominantly in “relatively quiet water near the stream banks.” During the day, juveniles hide in plant cover near the banks, and nearly all adults hide in burrows dug into stream banks (Penn 1956).

Life Colors and Distinctive Characters

As is characteristic of the *Pennides* subgenus, *P. ouachitae* has a mottled dorsal portion of the carapace, below which a broad, dark band extends longitudinally along each side of the carapace and onto the abdomen. Below that is a cream colored band, also extending longitudinally. The posterior third to half of the tail fan is dark. Chelae have a unique black band entirely encircling both fingers.

Procambarus ouachitae has a long rostrum, relatively short acumen, wide areola, and two cervical spines. Antennal scales are roughly triangular. Chelae are long and fairly slender with tubercles covering the palm and forming a prominent row along the interior margin. Males have hooks on the third and fourth pereopods (legs).

Size

The largest reported individual is a form II male with a carapace length of 55.5 mm (Payne 1972). The largest individual we captured during a life history study in Mississippi was a female with a carapace length of 43.4 mm (unpublished data).

Most Like

In Mississippi, *P. ouachitae* is most similar to *P. vioscai*. The two have roughly similar body coloration, but the most striking difference is that *P. ouachitae* has a broad, blue-black band encircling the fingers except for the orange to cream tips and base. The fingers of *P. vioscai* have, at most, some blue-black color on the interior side of the moveable finger.

Using sexual characters to distinguish between the two species may be easier with females than males. In *P. ouachitae*, the sinus of the annulus ventralis extends to, or very near, the anterior visible portion of the annulus ventralis, even in juveniles, and in mature females, large tubercles extend from the fourth sternite posteriorly to cover the anterior portion of the annulus ventralis. In *P. vioscai*, the sinus does not extend to the anterior edge of the annulus ventralis, and the posterior edge of the fourth sternite is smooth, not protruding over the annulus ventralis. In form I male *P. ouachitae*, the cephalic process of the gonopod does not extend at an angle over the caudal process as in *P. vioscai*, and the mesial process extends more anteriorly, compared to slightly caudally in *P. vioscai*.

Life History

In Arkansas, Penn (1956) made collections from April through September. Form I males were found in May and August and form II males in April, May and August. A female with a sperm plug was found in June and one with 50 eggs in September. Small juveniles (10-20 mm carapace length) appeared only in May and June.

We examined life history at one site in Mississippi for 15 months (unpublished data). The smallest juvenile we found had a carapace length of 5.3 mm, and all of the smallest individuals (CL < 8 mm) were caught in October and November. From September through June, we caught 304 individuals with carapace lengths of 10-20 mm, with only two each in the first and last months in that period. This suggests a more protracted

reproductive period in Mississippi compared to Arkansas. None of the females we caught had active glair glands or eggs, and we captured one form I male in mid-July.

Crayfish Associates

During standardized stream sampling of Mississippi National Forests, we collected *P. ouachitae* with the following species, in order of decreasing frequency: *O. chickasawae* (in 76 % of samples containing *P. ouachitae*), *P. vioscai* (32 %), *P. hayi*, *C. striatus*, and *P. clarkii* (1 collection)(unpublished data). In non-standardized sampling, we also captured *P. ouachitae* with *Fallicambarus fodiens*, and Penn (1956) captured the species with *P. acutus acutus* (listed as *P. blandingii acutus*). Despite being closely related species (Penn 1956), *P. ouachitae* and *P. vioscai* co-occurred at a number of sites in the Little Tallahatchie River drainage, MS. When syntopic, however, one species or the other was always vastly numerically dominant (unpublished data). Of the two species, *P. vioscai* was collected at more sites in the drainage.

Conservation Status

American Fisheries Society ranking: Currently Stable

Heritage global ranking: G5 (demonstrably widespread, abundant, and secure)

See (Taylor et al. 2007) for further explanation of these rankings.

Species Description

Penn, G. H. 1956. A new crawfish of the genus *Procambarus* from Arkansas (Crustacea, Astacidae). *Lloydia* 19:109-119.

Literature Cited

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Revision date and version

17 October 2008, version 1.0

Recommended citation

Adams, S. B. 2008. *Procambarus (Pennides) ouachitae*. Version 1.0. USDA Forest Service, Crayfishes of Mississippi website, Oxford, MS. (URL)